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(54) MOS transistor and fabrication process therefor

(57) An MOS transistor comprises a semiconductor substrate having a field region; a gate electrode (19) formed on the semiconductor substrate (1) through the intermediary of a gate insulating film; and source/drain regions (31) formed in the semiconductor substrate; wherein the field region including at least a lower insulating film (3,2) and an upper insulating film (4) made of a material permitting the upper insulating film to be selectively etched with respect to the lower insulating film; the gate electrode being configured such that the gate length of a top surface thereof is greater than the gate

length of a bottom surface thereof facing a channel region positioned between the source/drain regions; the gate electrode having a sidewall spacer (16) formed of a sidewall insulating layer made of the lower insulating film (3,2) and a material (16a,15) permitting the sidewall insulating layer to be selectively etched with respect to the upper insulating film, the sidewall spacer contacting a side wall of the gate electrode for covering an outer periphery of the channel region; and the channel region being substantially leveled with the source/drain regions.

Fig. 1(a)

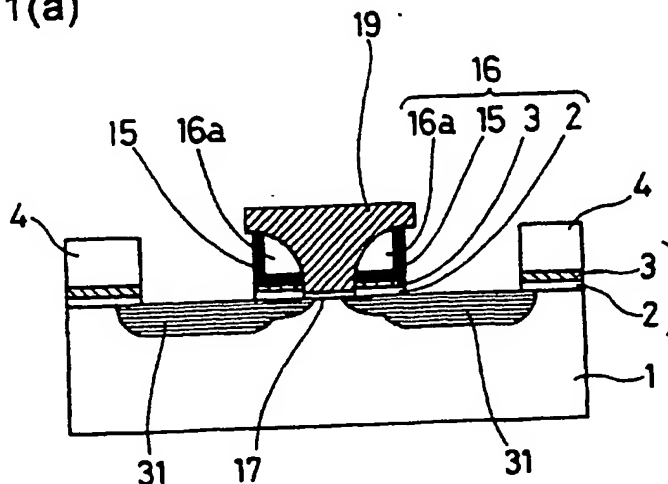
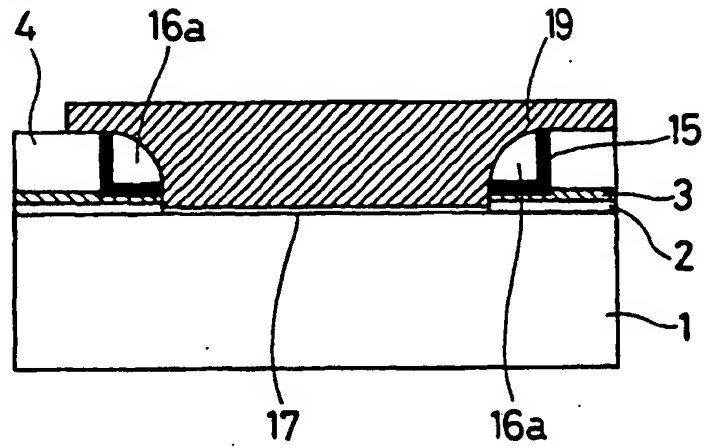


Fig. 1(b)





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EUROPEAN SEARCH REPORT

Application Number
EP 96 30 5957

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	HIRONORI TSUKAMOTO ET AL: "SUB 0.1 M NMOSFET UTILIZING NARROW TRENCH GATE AND SELECTIVE EXCIMER LASER ANNEALING (SELA)" INTERNATIONAL CONFERENCE ON SOLID STATE DEVICES AND MATERIALS, 29 August 1993, pages 26-28, XP000409365 * the whole document *	1-3,5	H01L29/78 H01L21/336 H01L29/423 H01L21/265 H01L27/092 H01L21/8238 H01L21/762
Y	PATENT ABSTRACTS OF JAPAN vol. 012, no. 246 (E-632), 12 July 1988 -& JP 63 036564 A (NEC CORP), 17 February 1988 * abstract; figure 2 *	1-3,5	
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A	US 5 270 234 A (HSU, LOUIS L ET AL) 14 December 1993 * figures 1-10 *	1,2,6	H01L
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 December 1998	Examiner Gélébart, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</p> <p>T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document</p>			



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DOCUMENTS CONSIDERED TO BE RELEVANT			
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A	US 5 342 803 A (SHIMOJI NORIYUKI) 30 August 1994 * figure 1 *	1	
A	US 4 942 448 A (TSUKAMOTO KATSUHIRO ET AL) 17 July 1990 * figure 12 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
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